VARIETIES OF POCK

DENDY.



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OF

POCK

DELINEATED AND DESCRIBED.

BY

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THE VARIETIES OF POCK.

The question of the prophylaxis and mitigation of small pox has ever been one of the deepest interest, both to the physician and the philanthropist, from the sixth century even to this hour. It is, indeed, one of increasing and paramount importance, both in a practical and political view, in consequence of the occasional occurrence of the disorder even after complete vaccination, and also of the present conflict of opinion between the legislature and the profession.

Now, although that truth has, to a certain degree, qualified the premature announcement of Jenner to the Commons, that vaccination rendered a person through life "perfectly secure from the infection of small pox," we must remember that this promise was made in the infancy of his important discovery, and that Jenner was soon conscious that even in those who displayed well-marked vaccine cicatrices,

susceptibility to an *intense* degree of variolous poison still existed.

The promise of *invariable* prophylaxis may probably be regarded by the experience of the present day as somewhat too absolute, yet it *is* certain that *complete* vaccination *is* a prophylactic in an immense majority of cases, almost invariably, indeed, for a certain term of years, or until the period of puberty, and an especial modifier in all; for I believe that where variola has proved acute or severe in those perfectly vaccinated, extreme malignity and very frequent fatality would have been the result, had that process been neglected.

It is the disappointment of its too confident hope of *certain* protection, that has induced so much scepticism in the public mind, regarding the real and *inestimable* value that vaccination undoubtedly possesses, and has proved the fertile source of that discrepancy of opinion, which, unhappily, has lessened the confidence even of those who were once its ardent advocates.

The error, thus imparted, and still prevalent, at once places the legislature in a dilemma between the injunctions of philanthropy and the objection to a coercive law: it has

hitherto thwarted that decisive interference, without which we may never hope to convert the yet formidable name of variola, like that of plague, into an almost obsolete term.

That this consummation might be confidently anticipated, is proved by the "analytical examination" of Mr. Marson, and especially by the report of the Epidemiological Society, which records that the proportion of fatal variola to the whole number of deaths, ranges from *two* to *sixty* in the thousand, according as the surveillance of government is more or less perfect in the insurance of complete vaccination.

Doubtless, the liberty of the subject ought not to be capriciously assailed, but, with these important truths before us, it must be no more regarded, if opposed to the safety of a nation, than the plea of ignorance against the enactment of quarantine, when we remember that one case of variola may be the source of infection to thousands, and especially when we are assured of the extreme diminution of its fatality in those continental states, in which vaccination is decreed to be an essential passport to charity, to servitude, to apprenticeship, and even to marriage.

In fully discussing this important subject, there are many questions of very deep interest which it might be essential to consider and decide. The investigation of the nature or essence of variola and its affinities, with which its prophylaxis is so intimately blended, would involve a careful analysis, chemical and microscopic, of the fluids and crusts of vesicles and pustules, ere we can determine whether the mere diffusion of a virulent humour or the development of animalcular or vegetable germs, be the essence or proximate cause of the disease. The mode of growth, or of evolution of a pock, clearly indicates a law of *development*, and the discovery of parasitic sporules in its fluids, would seem to confirm this indication as a truth.

The question, also, regarding an original identity or common origin of pocks, is still involved in obscurity. Even if it be determined in the affirmative, we have still to learn by what course of transmission vaccine has lost its epidemic character while it retains its prophylaxis, varicella retaining the former and losing the latter, while the most modified or slightest form of variola retains both, even though it be shorn of the secondary fever.

These are points of deep pathological interest, essential indeed to the complete discussion of this subject; but they must be reserved for the present, as they require an elaborate Essay. My chief object, at present, is *Diagnosis,* that correct decision on the true character and degree of a pock, without which the term "*successfully vaccinated,*" may prove a dangerous fallacy.

In the early stage of invasion or erethysm, the distinction between variola and its affinities, is constantly uncertain; it is often so to the inexperienced eye, even in the later or eruptive stage of erythema and of papulæ, beyond which point the prophylactic value, even of correct decision, is so far very much diminished as the adoption of immediate isolation will *then* often fail in the control or limitation of the infectious malaria.

How important, then, is this early decision. I have even seen cases of *exanthemata* mistaken and sent into the malaria of a variolous ward. In elucidation of this doubt, and also of that *degree* of *perfect* vaccinia, which alone can ensure prophylaxis, and the safety of the public, I have very briefly described the course or progressive stages of the varieties of pock,

and delineated merely their *common or prominent forms.* This result of careful study, in the wards of the Small Pox and Vaccination Hospital, and in private practice, will form, I trust, a clear and concise mode of impressing on the mind those prominent characters, which may tend to a correct and practical diagnosis, between variola and its prototypes.

Variola may be termed the type of its class: The acuteness or degree of its symptoms, its malignity and its peril, distinguish it from all its affinities.

It is imparted in two modes; by malaria, the *epidemic* or casual form; by insertion, the *inoculated* form. Although, as a general law, it affects the same system but once during life, there are rare exceptions to this law under intense influences; and these cases, especially if the primary disease was *inoculated,* are marked by an extreme degree of severity. It may assume in different systems or from different degrees of the poison invading similar systems, from the nature of the tissue in which the poison germ *incubates* and is developed, from idiosyncray, temperament, period of life, age or sex, various forms or species; the distinct

or scattered—the corymbose or clustered—the semi-confluent—the confluent—the malignant or adynamic—and the hœmorrhagic or bloody forms. These may so differ from each other, in external character and in the types or degrees of their symptomatic fever, that they may be considered, regarding prognosis and management, almost as different disorders.

Variolella, (*varioloid*), is the modified form of variola; the result of true variolous infection in a system previously vaccinated or variolated: it is capable of imparting true variola, at once or by succession, in a system unprotected and predisposed. It is usually distinct or scattered, but sometimes semi-confluent.

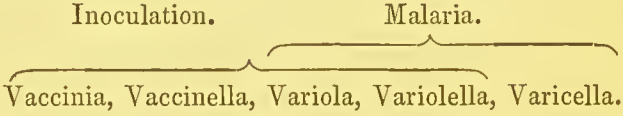
Varicella is epidemic, or imparted by malaria, assuming three prominent varieties: one only approaches the form of variola, having a partial disc. It may, although this is rare, produce from insertion of its serous lymph, a very slight vesicle, not, however, preventive of variola. It may appear occasionally in systems apparently under the full influence of variola.

Vaccinia is not malarious or epidemic, but imparted only by inoculation. It is not *spe-*

cially reproductive or prophylactic, unless it be circular, areolated, having a hard base, and containing lymph.

Vaccinella is inert or imperfect, or spurious vaccine, *nonprophylactic*. It is produced either from insertion of vaccine lymph in a protected, languid, or indisposed system, or from unhealthy lymph in a system tainted with cachectic or strumous diathesis, or syphilitic poison.

The qualities of the varieties of pock may be thus displayed:—



To ensure complete inoculation, the germ or poison drop, involved in the lymph, must be pure or healthy, and planted in a congenial soil, uncontaminated by any other poison, which, like a weed, might choke or blight its healthy growth. The germ, thus sown, as a vegetable seed is in the earth, or as a bud is engrafted beneath the bark, is then unfolded or developed, and thrown up to the surface of the skin (and the mucous membranes,) as a pock, displaying, like the flower, its characteristic forms and colours.

If, however, the germ be diseased—or if the soil be ungenial—either infertile or overrich—as in the asthenic and hyperæmic systems, an imperfect efflorescence will ensue, like the blighted or bloated flower: in the one case, a mere tubercular papula, or a minute or irregular seropurulent vesicle; in the other, a large furuncular pustule, surrounded by a diffused and erythematous or erysepelatous surface will be the result. The cutaneous soil may be naturally infertile, or it may be impoverished by over stimulation, like the depilated area of the ringworm, the effect, probably, of fungoid sporules, spreading in a circle.

The pock on the surface thus seems to be the depuration of the blood, saturated with a specific poison, which, having imparted its prophylactic influence, is then and there eliminated from the system.

VARIOLA. SMALL POX.

NATURAL, CASUAL, OR EPIDEMIC FORM.

The clearest division of the progress or stages of Small Pox, is into four periods: — Erethysm — Eruption — Suppuration — Desiccation. On the accession of each, there is an evident change of symptoms.

Incubation, (referred to by some as the first stage,) the interval between the infectious exposure and the premonitory erethysm, is indefinite, varying from ten to twenty-two days.

The period of erethysm is marked, progressively, by rigor, dryness of skin, heat, flushes, diaphoresis, languor, extensive pains, especially cephalalgia, nausea, vomiting and drowsiness. In children this often amounts to coma, with tossing or rolling of the head, and spasmodic twitchings and contractions.

About three days after the onset of this erethysm the eruptive period commences.

The rash or erythema is frequently blended with petechiæ, if the disorder is to be of the acute or severe degree. Soon after, or early on the fourth day of the fever, the primary papulæ are apparent, from which point the period, age or date of the pock is noted.

The eruption may be accelerated or retarded by debility, by cold, and various other causes, so as often to constitute an uncertainty for one or two days, regarding the apparent age of the pock.

Variola discreta—Distinct Small Pox.—The first external indication is an erythematous blush, varied in its degree.

On the second day of this blush, arise papulæ, (I. 1.) slightly granular to the touch, assuming, on the following day, a minute vesicular apex: the primary erethysm increasing until the fifth day, its acme, and then declining, remitting, or subsiding.

On the fourth, fifth, or sixth day the *pustules* are of a dull waxen hue, and firm to the touch, on a slightly indurated or tubercular base, surrounded by an areola of an orange pink hue, distinct and vivid (I. 2.) Pus is deposited in a series of opake cysts or multilocular cells,

freely communicating with each other, and occupying, especially, the retiform tissue of the cutis. The umbil or central depression, which the distinct pustule has now assumed, is depending on the adhesion of a pseudo-membranous disc to the papillæ of the cutis. Papulæ and pustules may be often *synchronous,* the eruption on the face, the alæ of the nose, and the margin of the lips, being a day or two in advance of that on the breast and limbs. The pustules are often semi-confluent or slightly coherent. On the sixth or seventh day, the pustules are complete and decisive, and still progressing, distinguishing the perfect disease from the modified form which may now be commencing or proceding in its desiccation.

The pustules attain their acme on or about the eighth day, (I. 3.) the tenth or eleventh day from the insertion of an inoculated or local primary pustule. They are now on the point of suppuration or maturation, the tubercular base being elevated to the surface. The spaces between the pustules are swollen from effusion of lymph, the eyelids are often closed: the umbiliform character is disappearing, and the cells are breaking up. Secondary erethysm, or fever, now supervenes, which again

is diagnostic between the perfect and modified forms, the latter being now on the decline, and not attended by this secondary fever.

On the tenth day maturation is complete, the multilocular cells are converted into one abscess or purulent cyst, the disc being loosened from beneath and slightly adherent to the cuticle, with which it may be raised : the pustules become softer and yielding to the touch, and are semiglobose or hemispherical. Sometimes a pustule will be reddish, from slight effusion of blood, into a broken cell.

Secondary fever is now established, often marked by symptoms of depression or morbid sensibility. If the degree of fever increase, the integuments may become, even at its onset, extensively tumid, delirium, diarrhœa, cough, opthalmia supervening, and ptyalism in the adult, combined with a peculiar and prevalent variolous *odour*. Inflammation is sometimes deep in the cellular tissue, terminating in abscess, analogous to the bubo of the plague. This may be *salutary* if opened freely and early by crucial incision. Desiccation or crusting is now on the point of commencing, continuing from the twelfth to the sixteenth day : on the palm and sole two or

three days later. The detachment of the under crust leaves a light crimson indented mark, which becomes a pearl white, slightly punctuated cicatrix.

Variola acuta, coherens, corymbosa—Clustered Small Pox.—About the fourth day from the onset of erethysm, the clusters of pustules are distinct, and in patches, on a defined crimson base, with raised margin. This form is usually severe, often perilous. Secondary fever comes on about the tenth day, its subsidence usually marked by severe sequelæ or secondary maladies, epistaxis, hœmoptysis, hæmaturia, opthalmia, abscess, extreme tumefaction, and often development of pulmonary tubercle, especially in the strumous system.

Variola confluens—Confluent Small Pox, (I. 4.)—The premonitory fever is, in this form, very acute, often typhoid, quickly succeeded by erythema of deep rose colour, interspersed with petechiæ, and with tumefaction of the surface. On the day following, crimson papulæ are thickly scattered over the whole body, irregular in shape and coalescing.

The discs are irregularly united and spread as a thick pearly and pasty film beneath the cuticle. Large bullæ occasionally form about

the neck, the febrile state being often so acute as to prove fatal ere the pock is fully developed.

The mucous membranes are constantly and severely implicated, and often the serous membranes also, especially those of the respiratory organs: therefore, hoarseness, cough, dyspnœa, and dysphagia are frequent, shreds of exfoliating membrane being constantly detached. Desquamation produces a brown honeycomb friable crust.

Variola confluens maligna—Confluent malignant Small Pox is chiefly occurring in depraved constitutions. Misshapen and turgid bags of doughy or gold coloured pus are often interspersed with groups or nests of pustules, livid and *flattened,* sometimes enclosed in one large cuticular bulla. On these a white margin is often perceived, which is the origin of the subsequent *seam.* Purple bullæ, (variolous pemphigus,) especially occur about the Nuchæ, to which, when opened, caustic should be directly applied. The disorganisation of the cutaneous tissues and consequent impairment of their functions, throws back or concentrates the morbid action on the internal organs, the peril therefore is imminent, especially if ptyal-

ism rapidly subsides, while swelling of the face increases.

Variola hæmorrhagica—Bloody Small Pox. —Purple or livid pustules, interspersed with petechiæ, usually indicating the scorbutic or hæmorrhagic diathesis. It is attended by severe internal hæmorrhage, synochus fever, marked by extreme enervation and prostration; becoming often rapidly typhoid, pustules, black or dark red, being accumulated *en masse;* the prostrate collapse often proving fatal, even within forty eight hours from the change of febrile type.

Variola Siliquosa, is a term applied to that form in which the pustules, about the period of their acme, become *flaccid,* the purulent deposit and the floating membranous disc being apparently absorbed without bursting or crusting of the pustule.

INOCULATED VARIOLA.

On the second or third day, after insertion, a dull red papula appears, preceded and attended by itching, which encreases in intensity until about the fifth day, when the spots assume a vesiculo-pustular apex. This *primary*

local pustule runs a solitary course until the eighth day, being then about its acme, and attended by severe erethysm. It is now often surrounded by crops of vesicles, the *secondary* local eruption, scattered on the tawny ereythematous areola: these assume the vesicular form from the first, and are yielding and fragile to the touch. The pustules of the eighth day are analogous to the casual pustule six days from the primary papula. On the tenth or twelfth day the *general* eruption appears and the *primary* fever is established, being analagous to the *secondary* or maturating fever of the casual form; so that the nature or *precession* of fever in the casual or epidemic and the imparted or inoculated variola is reversed. The pustules of the general or secondary eruption are now usually synchronous with the crust of the primary pustule on the arm. The inoculated pustule is softer and more easily stretched than that of casual variola, and more especially so than the vaccine vesicle, the firmest of all. These secondary pustules are almost always distinct, *precociously* running their course in a few days, changing to an *irregular* or angular umber crust, the succeeding cica-

trix being usually white, smooth and superficial.

In some cases it must be remembered there are no *local* pustules, only the *general* eruption : in others, on the contrary, the evidence of disease is confined to the *point* of insertion.

Variolella (I. 5.)—*modified variola—varioloid disease. True variola; yet imperfect, or modified in degree, progress and duration.*

If the variolous matter be *mild,* and the vaccine lymph *intense,* both being simultaneously inserted, they *may be* mutually modified, and run a parallel course. This is not frequent: variola will generally subdue the vaccine germ, and then, about the seventh day vaccinia dwindles and variola is established.

Variolella pustularis umbiliformis is the *severe* form of casual variola in one previously vaccinated or variolated. It is at its acme about the sixth day: the slight umbil or depression being sometimes apparent even on the third day. The pustule is usually flatter, of a fainter yellow, the disc smaller, the areola paler than those of perfect variola; it is preceded often by primary erethysm or fever, which distinguishes it from varicella. The

first pustules are usually on the hand, precocious, progressing quickly, suppurating or maturating early, desiccating before the period of maturation of true variola, the pustules sometimes shrivelling unbroken, and rarely marked by acute secondary fever. The variolous odour is often perceptible in a slight degree.

The pustule is followed by superficial and slightly foveated cicatrices.

It produces both casually and artificially, *perfect* variola in an unprotected system.

Variolella seropuruleuta is the slightest form of casual variola, mitigated in degree, modified in form and duration, marked by very slight erethysm, often almost solitary or in small groups, or very thinly scattered over the body. It is constantly mistaken for varicella, but the *primary stage* is, as in perfect variola, *papular*. In varicella it is at once *vesicular*. Vesicles do, however, sometimes appear from the fifth to the eighth day, resembling those of varicella; but, like those on the areolæ of inoculated variola, they are confined to the immediate vicinity, or to the roseola of this modified variola: varicella is scattered over the whole surface. In twelve or twenty hours, also, while the vesicles of varicella are

still unchanged or in *progress of development,* these vesicular satellites of variolella have changed their character, at once shrivelling or desiccating. This may be termed pathognomonic. This form is *unilocular,* the disc often a mere speck, desiccating or shrivelling precociously, producing *by succession,* but rarely at once, perfect variola. It is irregular in its eruption, pustules of different degrees or periods, and even light crusts, being *synchronous.*

If variolella and variola be compared on the eighth day, the first will be seen *crusted,* the second still *purulent.*

Variolella papularis — verrucous warty or horn pock, is spurious casual variola in an asthenic system, or inoculated variola in one previously variolated or vaccinated.

VARICELLA.

(I. 6.)—A vesicle, usually embedded in the cellular tissue, between the cutis vera and the cuticle, without an indurated base, seldom decidedly pustular, unless irritated, so as to form a unilocular abscess. Varicella is epidemic, but not, I believe, prophylactic of variola in the slightest degree: although the primary erethysm, or fever, which is very rarely ushered in as in variola, by rigour, may be severe; and the vesicles, *dipping* towards, or into the cutis, and terminating in *pits*. A minute vesicle may be induced, though very rarely, by inoculation. The eruption usually continues in succession for three or four days, the *vesicles* at once and rapidly forming; therefore, three or four stages of eruption may be *synchronous*. They are very seldom based on erythematous blush.

Varicella vesicularis—Chicken Pock.—Vesicles, in various stages, from the first day to the third or fourth, may be synchronous. They are of varied forms, circular, oval, or oblong,

and contain a limpid or straw coloured fluid, desiccating about the fourth day, until which they preserve their original form if unbroken.

Varicella conoidea—Swine or glass Pock—Varicella globosa—Hives.—These may rise in succession from the fourth even to the tenth day. The erethysm, ushering in these forms, is often severe for a day or two. The vesicles and areolæ are more extensive than in the first form, the conoid vesicle assuming a vitreous character, the globate being hemispherical, with a small central irridescent disc. They are sometimes slightly maturating, when they are marked by secondary erethysm for a day or two.

The crust falls off in fragments, and leaves, as in Variolella, no induration on the spot, the cicatrix, when pitting occurs, being white and smooth.

VACCINIA, VACCINE DISEASE, COW-POCK.

On the third or fourth day from the insertion of vaccine lymph, a pink papula, surrounded by a faint areola, appears. (II. 1.) It may arise, suddenly, on the fourth day, after having been deemed a failure on the third, (of its incubation.)

It is attended by itching or tingling, which increases for a day or two. On the fifth day from insertion, a viscid and specific lymph is deposited in a congeries of diaphonous cysts or cells. The vesicle (II. 2,) is multilocular, elevated, circular, *slightly* umbiliform, and surrounded by a rose coloured areola : its degree or variety depending on the force or activity of the inserted lymph, or on idiosyncracy or atmospheric temperature, which may retard the progress for a day or two. On this day, the character and infectious quality of the vesicle *are established,* the lymph being active in proportion to its early freshness, on or after this day.

About the seventh day, the pearly pinkness, the defined round margin, and the central umbil (II. 3.) distinguish the vesicle from variola, which is often still irregular and semi-globular; and from varicella, which on this day would be in incipient desiccation.

The vesicle attains its acme about the ninth or tenth day, (II. 4.) Inflammation often extending to the subcutaneous cellular tissue, and to the axillary glands, accompanied by erethysm of different degrees.

On the fifth and on the eighth days, the vesicle should be specially examined: on the latter, the full prophylactic or systemic influence of vaccine is insured.

As a rule, at least *three perfect and uninterrupted vesicles, marked by erethysm,* should be completed, ere we can pronounce prophylaxis: I believe, however, that intensity or degree is of equal importance with number.

From about the twelfth or fourteenth day, the desiccation of the mature vesicle is progressing: the crust, which is circular and defined, is detached about the twentieth, from a crimson depression, leaving a white or pearly *foveated or punctuated* cicatrix (II. 6.)

The vesicle, produced from the insertion of

lymph, directly from the cow, is often of extreme acuteness and extension, and is marked by severe constitutional symptoms.

If, when the primary vesicle is five or six days old, lymph from it be inserted into the other arm, the consequent vesicle will often, in its progress, overtake the primary, although it is always of milder degree, and fade nearly synchronously with it. This process is termed *Bryce's test* of systemic influence.

Vaccinella. — Imperfect vaccine. — Nonprophylactic. — Vaccine may be blighted. (II. 7.) This blighting may, however, be often averted, or checked, or modified by the complete insertion of active vaccine lymph, *three days,* at least, before the primary variolous erethysm. The vaccine vesicle will then be *six days old,* when the variolous papula is of the *third day.* If the *relative seniority* of the vaccine be less than this, the variola will subdue it.

The vesicle may also be subdued or thwarted by systemic debility or taint, as that of struma or scorbutus: or it may be immature in consequence of lymph being inert or inactive, or of an unscientic mode of inoculation. As a rule, the lymph should not be taken from the vesicle before the fifth day

from the papula, nor after the seventh. At its insertion, the skin should be tightly stretched *vertically* on the arm, and not around it, by the index and thumb of the left hand: the lancet, which should be *obtusely* pointed, should be quickly but gently inserted and withdrawn directly, so as not to irritate the wound and encrease the *common* inflammation, which might interfere with the efficient absorption of lymph.

The insertion of even very active vaccine lymph into a system protected by previous vaccination, may be altogether without effect; or it may produce spurious papulæ or vesicles of very varied character. (II. 8.)

If the fluid inserted be impure, that is, either purulent, from an ulcerated surface, or decomposed, as it may become by being kept too long in a fluid state, and especially if the system of the recipient be cachectic, very protæan forms of disease may be induced; (II. 9.) ulcer, abscess, rupious crusts, or erysepelas, attended by erethysm, or acute or even typhoid fever. These diseases may be suddenly fatal by inducing cerebral disorder, or, if protracted, they may establish chronic disease of the skin, a result so often impelling

the doating mother to deplore and to depreciate, unjustly, the value of the process.

The disease induced from inoculation of a vaccinated system with *variolo-vaccine* lymph from the cow's udder, resembles, in its pustule and its ulcer, a superficial carbuncle, the *udder sore* of the cow. These spurious and morbid secretions are of course non-prophylactic.

THE END.

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II.



DRAWN FROM LIFE BY W. C. WENDT

LEIGHTON BROS. LITH.